/374 cont./

342 Scientifique still found the dome-shaped huts in the neighborhood of Cape Horn, where conical ones were already appearing, whereas on the shores of the middle and eastern Beagle Channel there were only conical huts (Hyades [q]:343). Modern times have brought about a [177 412] still more radical change with the introduction of the European iron ax, since with it and other iron tools thick trunks can be felled even in the west and south, and these are suitable for the construction of a solid conical hut (14). /375/ This explains why both types of hut

14. Lothrop (b):128 very emphatically points to this circumstance: "The introduction of the ax has increased the use of the pointed house form" /cited in English/. In Figure 52 he reproduces a "modern Yahgan house" of this type of construction.

were erected side by side in a few places of the middle zone, and why in a particular place one traveler spoke about this form, another about that form (15).

15. On the islands near Cape Horn in February, 1902, Dabbene (b):178 saw the more stable, cone-shaped form of hut, which seemed strange to him. Twenty years earlier, among the Yamana of the south, the Mission Scientifique still found the dome-shaped hut.

[161] 342 177 Since the west has become completely depopulated, the last Yamana are staying mostly in the central part and in the east where European travelers have found only cone-shaped huts with a framework of thick trunks (16). One is not mistaken if he considers this more stable

16. From the indefinite accounts of other travelers we cannot reach a safe judgment about the distribution of the two types of huts during their sojours in that region. In Bove (c):157 (and in MM;XVIII, 189; 1884) we read: "Their huts have, in general, a cone-shaped form and two doors diametrically

/396 cont./
372 505 They have loaded up with firewood before their departure and piled it near the fire. Here it dries a bit and /396/ is conveniently [85] at hand when needed (58). The children feed the fire according to

58. For a longer trip they provide themselves amply with firewood and stack it, as Hyades (q) :304 has observed, at one of the two ends of the boat.

their parents' instructions.

When possible, they take only very dry wood in their canoe, since the unpleasant smoke from wet wood could scarcely be avoided. When they leave their craft upon landing, the children [87] carry the glowing sticks of wood to shore and place them on the spot which is to be the center of their new hut. Here they soon rekindle a larger fire. The Indians are scrupulously conscientious

[412]

Fig. 14. Fire Tongs.

about extinguishing all glowing embers of the canoe fire by dousing them with water. If they continue their journey the next day, the children once more carry the glowing sticks of wood to the canoe and light a new fire in it.

372 Whenever a family leaves their fire, either in the canoe or in the dwelling, they take care to put out even the last glimmering bit. The fire could easily come alive again, /Fig. 14 appears here/ spread, and cause serious destruction. The glowing embers are scattered, pounded and beaten with a cudgel, covered with gravel or sand, and finally doused liberally with snow or water. This removes all danger.

372 To arrange the fire and distribute the glowing pieces of wood, the Indians reach for any stick that happens to be handy. 412 They like to use regular fire tongs which no family is without. Here they are known as lêka (Fig. 14), also lêkka according to BD: 278, and correspond exactly to the lêkg of the Selk'nam

/398 cont./

372 (Vol. I, 398). They choose a straight stick, as thick as one's
412 thumb, of Berberis ilicifolia, strip it of leaves, twigs, and cracked
parts of bark, smooth the surface, and split it two-thirds of its
entire length which is hardly more than 65 centimeters. After-
wards the lower, split end is cut off flat. Since the tension of the
wood fibers keeps the two ends spread slightly apart, these five
tongs can be easily manipulated simply with pressure (58).

[177]

58. Hyades (Q) 304 and Lothrop (b) 130 have also described this implement briefly. The similarity in terminology between the Selk'nam and Tamana causes Lothrop to speak of a "cultural borrowing," which should not be dismissed.

137 The natives have the advantage, which they truly appreci-
313 ate, of some growth of trees throughout their homeland, even on the dreaded Cape Horn. It is lacking only on the low rocks and smooth stones that /397/ are exposed to waves and storms without any kind of protection. Wherever shallow crevices or protected ravines cut into the rocks, frail shrubs and thicker small trees cling, successfully resisting storms. The Indian finds his needed fuel at every landing place, so to speak, although at some places he obtains it more easily. He prefers dry beechwood for his fire, for he dreads the damaging smoke of green logs (60). He finds it

60. Persistent watering of the eyes and slight inflammation of the eyelids are the consequences of the stinging smoke. See Hyades (Q) 348 and Lothrop (b) 128, as well as footnote 56.

as driftwood that has been washed ashore by the waves. He also goes a few steps into the woods and breaks off dry branches with his hands. If they are higher up, he tosses the ropes of his bone amulet there, rope vigorously, for beechwood is very tough, and pulls them down. He falls hollow trees entire with the weight of his body and then splits them. As soon as a family lands, the
[83] children disperse throughout the neighborhood and gather wood which they bring to the campsite.

/413 cont./
in the Wulaia region: "The greene part of the skin we saw on the natives, were Otter skins; there were very few Guanaco skins... Seal skins, both fur and hair, were numerous. Many of the skins were sufficiently large to cover the whole person" (VSA:XI, 388, 1864) /cited in English/.

not only to make their meager articles of clothing, but for all kinds of implements and utilitarian articles. The awes and the fire are burned only for their fur. Following an old, sanctioned custom, man and wife share in the work of preparation; the heavier work falls to the man, and the lighter handwork to the woman. Fortunately, the skins are extremely greasy and oily. After they have been removed, they keep perfectly for several days despite complete neglect. The sometimes continuous inclemency of the weather very often hinders the man in accomplishing pressing tasks, during which time many objects are badly damaged from lack of immediate care and proper treatment.

When possible, the successful hunter makes every effort to skin the seal immediately at the place where he killed it or at the first boat landing place. His main object is the delicious blubber and the fresh meat. First he must pull off the skin. He places the sea lion or colored species on its back lengthwise on the ground. His first and only long incision is made from the neck over the chest and belly to the end of the rump. A sharpened mussel shell serves as a knife. The second and deeper incision runs around the neck. He does not yet sever the head completely, /415/ but thrusts his knife in so deeply that the whole head can be grasped with both hands and, after the cervical vertebrae has been broken, torn off with a sharp tug. He begins above at one edge of the skin on the other end, holding his knife in his right hand and grasping the skin with his left, he pulls it away from its adhering layer of fat by means of short, contiguous, oblique cuts. The flippers are pushed out inward from the joints under the skin which has been severed all around, and thus they remain hanging on the skin. He works his way slowly, piece by piece, first on one side, then on the other, always in the direction of the rump until the whole

/KLO conn./
hard that the sticks of the frame can be removed (88).

88. This backstrap loom for stretching skins is quite an simple and stands after the same pattern as that of the Selk'nam (Vol. I, p. 158, and fig. 53). Some time ago Despard spoke of a preparation of "skins by stretching /klo/ them to remain frames, still quite dry, then scraping and rubbing with stones, still soft and smooth, and white in color" (1918, 88). [illegible] /klowel in English/. Its procedure is anxious and familiar also to the Halakwulup.

/KLO/ The procedure is the same for stretching sun-drying the skins of the fox and the otter, but the work is easier because these skins are lighter and smaller. Some care is required thinning penguins and cormorants, as well as in stretching bear skins, *kpen, oshorf*, which are thin and delicate. The found skins of other animals are not dressed.

If the dried, still real skins are used for the covering of the hut, they need no further preparation, but for their very other use it is necessary to clean them. The ordinary knife or sharp-edged mussel shell serves as a scraper. The woman scrapes the inner side, piece by piece, with the entire broad side of it blade. The skin is spread out on the ground with the hair side down, and she kneels or squats on it, pushing herself along bit by bit. With uninterrupted movements of the arm, she draws the scraper toward her body with moderate pressure and in short strokes. Since the scraping marks appear in layers and point in the same direction. In any case, the scraped surface looks irregular because th sharpness of the scraper and the strength of her arm vary constantly. It is necessary to remove primarily the dried fatty tissue and the transparent horny layer of the surface because they tend tear easily. The woman is mostly guided by feeling, hence it cannot b definitely determined how deep she should go on the scrape. It depends on the thickness of the entire skin.

Often it is also necessary to remove the hair, as are pieces of leather are needed for the hair-rope and for patches on scrape.

/414 cont./

In the case of smaller pieces, the hair is sometimes scraped off with the scraper, but more often the natives encourage a process of decay. One method is to place the entire skin under the sleeping section from which a flat layer of earth has first been removed. It is then covered with damp earth, grass, or moss, and the bed is arranged upon it as before. They leave it there, and life in the hut goes on as usual. Dampness from below and a little warmth from above start a process of fermentation which loosens the layer of hair. Eventually this can easily be stripped off with the flat of the hand, as soon as the leather is covered with a slightly slimy, sticky layer (88). Another procedure, used by the woman, is more

88. In brief, general terms Hyades (4):347 also mentions this method of treating the skins to remove the hair.

[574] successful. She collects her own urine on the piece of leather which is spread out with the hairy side upward, letting it penetrate for some time. It does not matter whether the piece lies inside or outside the hut for several days, and it is at the same time exposed to the dampness of the earth. These people think that human urine is more effective when it is collected on the piece of leather and, still warm, is immediately /415/ rubbed in with the palm of the hand or with a small tuft of wood shavings. After this has been repeated several times, the skin is covered with a thin layer of damp earth and then frequently sat upon or slept on so that it is given a good deal of body warmth. After about two weeks the hair can be stripped off easily. The piece of leather is now extremely soft, and one can easily cut out long ropes or short straps.

An otter skin takes more work to prepare. When the woman has completely dried it on the framework of sticks mentioned above, she plucks out the long, coarse hairs individually with her fingers [582] or with two stunted shells that fit one on top of the other. This is an irksome process, but in the end it gives the coat, velvety soft fur that everyone regards with pleasure and enjoys stroking with the palm of the hand.

After they are dried, the hard, thick seal skins must be thoroughly beaten, even though the underside has been well scraped, to make them soft and flexible. This requires strong hands, which

/421 cont./

382 out want to be bothered with it, he ties a narrow strap, a tendon, or a few skeins of rushes around his head to hold it. A man even uses his sling for this purpose. If women bend their heads, the hair falls forward and covers the whole face, but they never tire of pushing it aside. Bove (c):157 wrote: "Men and women wear very long hair that falls to their shoulders; only a few fasten it with a leather band. Most of them, however, let it grow so wild that both sexes look more like furies than human beings."

The men like to shorten their hair. That is the only difference in the so-called hair style of the two sexes. They use a [382] flat mussel shell, spread a small tuft of hair on it, and draw a sharp-edged shell over it in a sawing motion until the ends fall off. Then they take the next tuft, until they have done the whole head in this fashion. It cannot be helped that the hair-cutter grows tired; the other must endure much plucking and pulling, and the whole job is very irregular.

Modest grooming of the hair is not entirely lacking, however. Despard /419/ learned from an Indian that "only women use oil to make fine hair; then comb very smooth with porpoise jaw" (VIIIVI, 55: 1818) /cited in English/. Both sexes alike regard the secondary body hair as ugly and in bad taste. For this [382] reason men pluck their sparse beard hair, and all adults their underarm and pubic hair, with their fingernails or with two shells that fit one on top of the other. Older people become careless about this. In most recent times the men let their beards grow, [177] in order to be like Europeans. Now one can easily see that they do not produce more than isolated hairs on the lip and chin (98).

382 312

86. In this connection Bove (c):156 says that "the men, besides being beardless, habitually pull out the little beard hair that they have, and the two sexes have no hair of any kind on the body" /translated from Spanish/. Lovisato (b):139 agrees. Fitz-Roy (z):178 had mentioned: "They would have a straggling beard, but scrupulously pull out every hair with tweezers made of muscle-shells" /cited in English/. According to Despard (VIIIV, 186: 1817)

/423 cont./

192 382 "they were beardless. One or two of the older men had some hair on their faces, which, while talking, they were continually engaged in twitching out" /cited in English/. And Rowe (1864:XVIII, 169, 1864) says: "The men have very little beard, and even that little they are accustomed to tear out or cut off with shells" /cited in English/.

In general, they have only very little and faint hair on their

•[423]

Fig. 18. Upper jaw of Porpoise Used as Comb. Natural size.

bodies. In this respect they resemble the Seik'tam. /Fig. 18 appears here./

177 382 Under the influence of Whites, younger and middle-aged Tareños have learned not only to dress in modern fashion, but also to wash their faces with soap and to arrange their hair with a comb. Vain chaps shave with improved razors.

383 423 To loosen the hair matted with dirt and lice, not so much because of a desire for cleanliness but because of the discomfort, they use a somewhat coarse comb. It comes in three styles. The most easily obtainable is the upper jaw of the porpoise which is about 12 centimeters long and has two rows of short teeth (Fig. 18). It is occasionally found on the beach where it is so excellently cleaned of all organic matter by wood lice and other lower animals that it can be used without any further preparation. At first this bone is still greasy, which is beneficial for the hair. At any rate it is very easy to use and durable. This comb is called *shkuin*. Even an otter skull, cleaned of all meat /423/ and without the lower jaw, serves as a comb as long as the few and

/Kid cont./

363. very irregular teeth are still firm in the dust, narrow upper jaw
• 952. (19f).

190. Hyades (q) 363 confirms this very emphatically.

[341] The other comb must be specially made and that is why not everyone has it. It is a flat piece of whale bone, the size

Fig. 18. Comb Made of Whale Bone. Two-thirds natural size.

of a child's hand, into which five to eight teeth are cut. The teeth project across the entire piece, with not very large spaces between them (Fig. 18). This is in contrast to the comb of the Selk'nam (Vol. I, 322). In the central Tehuelche region where porpoises are rare, this somatikament[1] is generally used (181). [Fig. 19 appears here.]

181. Ludwig (b) 131 mentions both types and says. "The Tehuelche sometimes comb their hair" /cited in English/. Hyades (q) 363 does not mention the last comb we

/423 cont./

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describe, but does speak of "a piece of the upper jaw from a dolphin or porpoise, with teeth" /translated from French/.

[237] As a makeshift when the two objects mentioned above are not available, they gather a bunch of bird feathers and tie them together at the bottom with a fiber of tendon. The bunch of feathers is grasped with the fist, and the quills are drawn through the hair, like the teeth of a comb (102). Girls like to

[57]

102. According to Fitz-Roy's terse words (x) :139, the hair grooming of the Indian women is confined to the following. "The hair of the women is longer, less coarse, and certainly cleaner than that of the men. It is combed with the jaw of a porpoise, but neither plaited nor tied; and none is cut away, excepting from over their eyes" /cited in English/.

make this [illegible] as playful dawdling, and conveniently loosen their hair with it.

58 Little though the Yamana heed a clean body, they nevertheless appreciate a clean person who washes often and keeps his hair combed. Many mothers care for their children; others appear disgustingly dirty and completely neglected. Such differences are not infrequently a topic of conversation among the old people who criticize in one case and praise in the other. At any rate it shows that a natural feeling for cleanliness is not entirely lacking. In spite of the many useful things that Europeans have brought them, they will never rise above a certain level of uncleanliness because they are inseparably bound to their conditions of life. The European clothing which everybody wears nowadays is likewise covered with dirt and fish oil. Because of it fresh air and beneficial rain can no longer act directly on the skin, hence their bodies are always covered with a thick, malodorous crust of dirt. Thus, the abandonment of their former spiritual body covering is slowly but badly undermining the vitality and health of these Indians, who are themselves aware of it.

[77]

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182 /438/ The more inflexible the raw material is from which our Indian manufactures his possessions, the more convincingly apparent are the creative and organizing power of his spirit, his keen gift of observation, and his dexterity. Repeated attempts must have preceded the shapes and the individual pieces chosen for the permanent store of possessions of this tribe and retained by many generations. If we examine each individual item, its extreme appropriateness in every respect becomes so clear that we realize hardly anything can be improved to any extent which would at the same time also increase the efficiency of the object. By itself the object looks poor and artless, but if you see how it is applied and used and with what little effort it functions very accurately, you cannot refrain from marveling at its merits.

178
411
231 If we compare the accounts since the middle of the nineteenth century with the reports from the first two centuries in which Europeans and Yamana came together, it is apparent that a change has taken place in the utilization of individual objects. By this I do not mean that European goods, such as knives and axes, have been taken over, but that bow and arrow were gradually superseded by the sling. The real reason for this -- to mention the point already -- seems to be the introduction and swift adoption everywhere of the dog. The dog serves the Indian in various ways in his hunt for otter. We know that it is not easy to aim accurately with bow and arrow from a canoe. I have frankly expressed the opinion that only after the Europeans discovered the Yamana did the dog become their inevitable companion, which is how travelers have designated this animal since the middle of the last century. Aside from this small change, all the things that are used daily have been preserved in their original form until the present time.

176 The implements and weapons of our Fuegians cannot be too thoroughly investigated and observed in their use. They reveal a gift of creative invention in these Indians, who have been wrongly underestimated and so often pitied as the "most miserable people." Yet they have created tools for themselves which make it very much easier for them to obtain food and to protect their bodies.

/440 cont./

develops an even, smooth trunk and becomes thicker than the two other species of beech; moreover, its bark does not crack so easily (p. 28 /untranslated/) (124).

> 124. BD:661 emphasizes: "The bark especially of the hanis [Nothofagus pumilio] is consequently unfit for canoes" /cited in English/. Bridges (k):223 says: "The natives use the bark of the perennial beech [Nothofagus betuloides] for the construction of their canoes, since that of the other species is useless for this purpose" /translated from Spanish/.

When the men come across a trunk that can furnish a suitable piece of bark, they set to work. At least one of them is a capable canoe builder, and he estimates the proportions by eye. They distribute their forces to remove the bark, after they have carefully looked over the faultless piece, free of branches and scar protuberances. The smooth surface must measure at least five meters. The middle part of a long strap of seal skin, tákpa, wulúkpa, is tossed over one of the higher branches, so that the two halves hang down freely for the time being. There is a loop at one end, which one of the younger men puts around his hips and fastens. While his companion pulls the other end, the young man climbs up the trunk bracing himself with his feet and more or less embracing the trunk with his hands. At the top he begins the incision and /441/ draws it perpendicularly to the bottom. Since he is secured with a cord and slowly lowered by the other man, he has both hands free for this work. /Fig. 25 appears here./ Having arrived at the bottom, he must climb up again. Now he draws the horizontal incision all around the trunk. If the trunk is unusually thick and if one section of bark suffices, he must outline this in the required width by a second lengthwise cut. The second horizontal cut a little above the ground is easier to make.

For this work the man uses a bone wedge and a suitable flat stone as a hammer. The former, actually, is used only for the incision in the bark and, very seldom, also to split thicker trunks into firewood. It is made out of a wide rib bone of the whale and

[Text continues on page 113.-Analyst]

/441 cont./

396 313 412 is about 35 centimeters long. There is no actual handle. The piece of bone is filed on a rough stone until the wedge shape appears, with a slightly rounded blade (Fig. 26). The Indians grasp the upper half of this wedge, ïïa, with the left hand, place it against the bark with light pressure, and, with a stone in the right hand, hammer it in until they hit the fibers of the wood. They handle it like a chisel. If they do not have a wedge of bone, they make the incisions in the bark with a filed mussel shell or with the true shell knife (125), but this takes longer and is far

125. Hyades (q):350 is speaking only of this when he maintains that the Fuegians "cut the bark on the tree by means of their mussel shells, sharpened and provided with a handle" /translated from French/.

more tiring.

396 313 After the piece of bark in the shape of a long rectangle has been outlined with the bone wedge, the man again ascends to the upper /442/ horizontal cut. Here he loosens the upper edge with the same or with a finer bone wedge, being careful not to split the bark. The more rounded the bark is, the more it tends to do this.

396 313 412 Some men use a peeler of bone known as /Figs. 26 and 27 appear here/ sïïsa, according to BD:283 "a bone bark stripper" /cited in English/. Lothrop (b):143 writes sïnaka. It is about 60 centimeters long, quite flat, seven millimeters thick, and has the shape of a curved paper knife. It is made from a whale rib. It is pushed under the bark, little by little, about 15 centimeters deep, and with light leverage the bark is loosened all the way around, all the more safely since the peeler is slightly springy (Fig. 27) (126).

126. Spencer:131 says in this connection: "The Yahgans make incisions with shells or with stone knives, and prise off the slabs with a long, slightly curved and flat bone tool" /cited in English/. Despard (b):679 probably also refers to this piece which he describes as "a whale's bone made into the fashion of a curved knife" /cited in English/.

[Text continues on page 115.-Analyst]

1: Gustafson--114 E-8 (1918-1924) 1927 5196 Yahgan 5196

/442/

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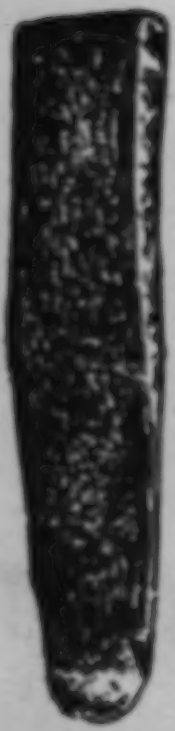

Fig. 26. Bone Wedge.
One-quarter natural size.

Fig. 27. Bark Peeler

/471 cont./

941 313 part that remains, he lifts out the core (Fig. 34). These layers of wood are neither too flexible nor completely stiff, but are slightly springy and absolutely sound.

941 312 Through endless scraping with quartz splinters, sharpened mussel shells, or the knife, enough of the long pole is whittled off so that it is about 25 millimeters in diameter and precisely octagonal. Attention is given to this because of a definite esthetic feeling, but also the edges make it possible to grasp the shaft more firmly and safely. The shaft tapers gradually toward the bottom and terminates in a blunt end. On top they carefully cut a notch 12 centimeters deep. For the final polishing of the shaft, it is rubbed with pumice, hiyal, very uniformly and with gentle pressure. The end the shaft (178) is from 2.80 to 3.10 meters long.

178. Waddell (a):96 has furnished an exact description: "Their spears consist of firm bone, are seven feet long, sharply pointed, and have a barbed hook on one side, four inches from the point which... is fastened to a wooden shaft ten feet long and smooth and straight. A shorter or longer strip of skin is fastened to the bone." Snow (a):II, 15 supplements: "Their spears were about 12 feet long, made of hard wood, octangular, but about half an inch thick and one inch broad, tapering at one end to a point, and the other end to a butt" /cited in English/.

Fig. 33. Small Harpoon.

/480 cont./

line. When the fish has been brought near the surface, she reaches down and grasps it with a sure hand, pushing her second and third finger under each gill cover. After she has lifted it out of the water, she bites through its neck and kills it.

/481/ The snares and fishing implements used by our Yamana show extreme appropriateness. Each one of these things proves that it enables the Indian, with a small amount of effort, to get the wild animals he wants or is stalking.

9. Tools

The Fuegians have not yet advanced to a universal or even preponderant use of stone tools. To blame this on the sparse occurrence of quartzite and slate in those regions is not sufficient explanation. When iron and glass were introduced by Europeans, the natives used these materials immediately, albeit in limited measure, without, however, changing the original form of their implements or replacing them by others. Actual working of the stone seems necessary only in the case of stone arrowheads and dagger points (p. 169). It cannot be definitely shown whether these Fuegians also shaped the round black stone with a groove, known as *téri*. Hence the greater part of their tools consists of mussel shells, wood, and bone. This fact can be easily ascertained from the accounts of earlier navigators.

The following description pertains to those items as they were made before being influenced by Europeans. We must credit our Fuegians with considerable cultural progress by reason of the fact that they succeeded in making a number of implements of different construction and form, each with a very definite use.

We should like to mention briefly here a peculiar form of behavior of the Yamana which Lothrop (b):139 has also referred to. When they need anything for their implements, they do not take the trouble to make a thorough search for a good piece or await an opportunity to come across a better part. Rather, they take the first thing that comes along if it suffices for their momentary need and if it promises to fulfill the purpose for which it was intended. A better shaped mussel shell to be used as a knife, a more regular

/491 cont./

412 stone as a handle is perhaps lying only a few steps away from the
461 hut, but the Indian is not in the habit of getting up and looking around a bit if he can reach some halfway suitable item from wherever he happens to be sitting. He places little or no value upon a beautiful and durable tool; he is content if it serves him for a time. To a certain extent his negligence and carelessness is explained by the fact that he cannot adequately protect his things nor store them safely. An item is soon lost or becomes useless. Why, therefore, devote special effort to making it?

412 In this trend of thought we also find the explanation for the
177 fact that our Indians do not exert themselves too eagerly to obtain European iron tools. /492/ If they have one or another tool, they are content and use it as a universal instrument. When iron strips, blades, and nails were still a great rarity for them, that is to say, in the first three centuries after they were discovered by the "Nassau fleet," they assiduously stole these things. As soon as they were reasonably provided with them, their desire for them was, so to speak, completely extinguished.

α. The Scraper

412 The scraper, uſker, is an item that is used equally often by women and men. Cooper: 217 is right when he writes: "Among skin-using tribes like the Fuegian the scraper naturally takes an important place" /cited in English/ (Fig. 43). Every adult owns at least one of these as his personal property; for him it is more necessary than the pocketknife is for the European.

This object commonly has three parts, the most important being a large mussel shell which takes the place of a true blade. For this the natives choose a particularly strong, large specimen and give it the special designation of geluf (200). Vast quantities of

200. "A large, strong shelled mussel whose shell is used as a chipper," according to BD:245 /cited in English/. This is a large animal of Mytilus edulis, not another species, as Lothrop (b):139 erroneously says. Compare Hyades (q):299.

/492 cont./

492 mussels thrive at particularly suitable places where small, restless eddies of water supply them with abundant nourishment. The shell selected is at least ten centimeters long. They carefully break off the convex side edges to retain the almost flat center section, and they finally taper the end where the hinge is. This produces a wedge-shaped basic form, albeit with curved edges, and the pointed end is placed on the handle.

The handle is a stone about 12 centimeters long, either rounded or with edges, found on the beach. It would not occur to anyone to shape it a bit or to smooth it. The firm hand of the Fuegian knows how to grasp it securely in one way or another. The only thing to which they pay attention is to fit the shell exactly against the flat part of the stone handle. If there were any hollow space, it would inevitably break with the slightest pressure. In order to avoid this and also to make possible a slight springiness, the Indian shoves a thin, intervening layer of Xlidf, whittled shavings of barberry, or of moss, under the upper part of the shaft which rests on the shell. This forms a springy bed, as it were, on which the shaft rests. A narrow leather strip or a braided cord of sinew wound around both pieces several times holds them together adequately (Fig. 44) (201).

201. Good descriptions are given by Colini: 161, Hyades (q):299, Lovisato (a):196 and (b):136, Lothrop (b):139, and Spegazzini (a): 163. Certain similarities with the scraper of the Selk'nam are immediately apparent (Vol. I, 248).

[171]

Everyone grasps the scraper in such a way that the handle fills the entire right /493/ hand while the mussel shell, with its concave surface turned toward the body, is visible above the little finger. The Yamana moves it toward himself in a stroking motion. The scraper has many uses. It is employed above all in removing and cleaning skins, in cutting up animals and cutting the meat into pieces, in fashioning shafts and rods for lances, harpoons, spears, and trapping and fishing implements, in removing bark, and in the preparation of individual timbers required for the canoe, /Figs. 43 and 44 appear here/ for scoring branches

/493 cont./

4/2 and small trunks that they wish to cut off, for cutting an animal skin and various leather parts, and finally for many other types of work. Lothrop (b):140 confirms: "The scraper was the most important tool to the Yahgan and served a great variety of purposes" /cited in English/. This tool has one extremely favorable advantage

Fig. 43. Scraper.
Two-thirds natural size.

Fig. 44. Scraper.
Two-thirds natural size.

in the fact that its cutting edge, although it gets dull very quickly, can just as quickly be sharpened again. It is sufficient to give it a brief scraping on the rough stones that form the shore of the channels or a quick rubbing with a longish, flat stone splinter as a whetstone.

This scraper was probably the prototype of a chipper or a kind of chisel which the Yamana have made since iron has been introduced. They call it rupalapéna. Hyades (q):299 describes it as "a modern chisel, made with a piece of iron" /translated from French/. Besides ufkér, BD:573 also mentions tufkér, "a chisel-like piece of iron bound to a handle of wood and also to a suitable stone to add weight to it used as a kind of chipper" /cited in English/. Anyone who

412 has obtained a little flat piece of iron from a barrel hoop or from somewhere else given it a rectangular shape and pieces one narrow side against a flattened stone handle or squeezes it into a split, short piece of wood, lashing it with a narrow cord. The cutting edge is likewise sharpened on a rough, flat stone (202).

202. Lothrop (p.141, as well as Hyades (Q: Plate XXXII, illustrated this chipper or chisel in different versions.

177 412 It is clear that this chipper, as well as the one that the Selk'nam use (Vol. I, 248), has come into existence only since the Fuegians have received a few flat pieces of iron from the Europeans. How /434/ very much they promoted many ships' crews for these we shall merely touch on here. Soon they made this tool for themselves (203).

203. In King:417, Fitz-Roy several times mentions having observed among these Indians during his journeys after 1826 "cutting weapons made with pieces of iron hoop fastened on a stick" /cited in English/.

β. The Knife

412 The Fuegian can cut all kinds of things with his scraper; for certain types of work a kind of knife, *wiʃa*, *wiʃaʃi*, is more advantageous for him. It would be a mistake to think of this as an object like our knife; their tool is nothing more than the symmetrical shell of the razor clam (*Solen*). /Figure 48 appears here./ The meat of this animal which is common in the sand of flat shores in that region is not eaten. It is dug out only in order to obtain the shell which is about 12 centimeters long and three centimeters wide and consists of identical halves.

It is used chiefly for fine work in bark, leather, and bone, less for actual cutting, or as Hyades (q) :200 expresses himself, "to carve the pieces of bark for the canoe or, more exactly, to

L Graziado--LSU G-G (1850-1924) 1937 SH6 Tahgan SH6

/SH6 cont./

412

impress on them, as with a stamp, the curve according to which one ought to carve them" /translated from French/. The Indians reach for the shell of the razor clam if they wish to make very exact incisions. If regularity is not required, they take any bivalve shell or a suitable piece of slate and whet it on a rough stone. They can make deeper incisions this way than with the shell of the razor clam (204).

204. Dumond (b):673 speaks of a "curved knife of whalebone for cutting bark" /cited in English/. This is not a knife but the above-mentioned bark-peeler (Fig. 27).

Fig. 45. Stone Blade. Natural size.

Whereas these things are still used a great deal nowadays, genuine stone blades have been preserved from earlier times in the shell mounds (Fig. 46). These were probably now and then also used as knives. Lothrop (b):141, 190, in fact, calls them "knives" /cited in English/. They are usually longish-oval and have sharpened edges. In all probability they were primarily meant for lance- or spearheads. Even Lothrop (b):190 cannot but admit that the pieces he has reproduced "may well have served as knives or conceivably might have been barbless tips for spear or arrow" /cited in English/. A people that has only few implements will naturally use one and the same tool in many ways (208).

205. Moreover, the term "knife" is also used for various other items, and Cooper:217,

1: Gusinde--191 E-8 (1918-1924) 1937 SI86 Yahgan SI86

/494 cont./
for example, even mentions three kinds of knives.

/495/ Whatever it is they use in the way that we use our knife, it is never put together like the latter, but is nothing more than a bare mussel shell. Hyades (q):300 emphasizes: "The Fuegians do not have an indigenous tool similar to our knife; in its place they use a chisel of shell, or iron if they can get it" /translated from French/. In order to be able to grasp the mussel shell securely for cutting, they first place a thin scrap of leather in the palm of the hand, and by this means they can grasp the shell securely enough. /Fig. 46 appears here./

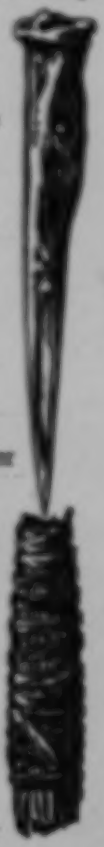

Fig. 46. Punch. Two thirds natural size.

γ. The Punch

The punch or bone awl, fmi, or whatever one wishes to call this tool, is used a great deal. The natives prefer the humerus of a cormorant from which all the meat is removed. The thinner end is broken off and filed to a sharp point. It is now about 13 centimeters long and is easy to handle. Occasionally, however, the bone of another bird is used.

[237]

In order to protect the point, the Indians take a bunch of rush stalks about as thick as one's thumb and lash it with another stalk of the same to hold it together. The point of the punch is stuck into this bundle, wĩna, for which they allow a length of about eight centimeters. Because of the packing, the point does not slide out, but is protected as by a sheath (Fig. 46). Sometimes this punch is nothing more than a small whittled stick of the hard wood of a

1: Gusinde--192 E-6 (1918-1924) 1937 2000 Yahgan 0006

/496 cont./
412 beech. It is about the length of a finger and is regularly used by all the women and girls for plaiting their small baskets (206).

[172] 206. Spencer:134 gives a detailed description of three bone awls that came from an old shell mound on Navarino Island. One of them is made from the bone of a young mammal.

With this punch small holes are pierced either into leather that is to be put together for cloaks and covers, bags, and pouches, into the bark pieces of a canoe, or in a scoop that is to be sewn together. In the most recent times the Yamana have
412 learned to make a genuine shoemaker's awl. They file off the
177 head of an iron nail the length of a finger and set this end into a short, cylindrical handle of wood; the other end is filed to a point. This punch, which penetrates leather and bark much more quickly, of course, and the people like to work with it (207). It must be specifically mentioned that drills have been

207. Lothrop (b):142 illustrated two of these modern pieces.

unknown to the Fuegians from ancient times; they are therefore unable to make holes in a piece of wood. For this purpose they have in most recent times used an iron nail which they obtain from Europeans.

/496/ δ. Wedge and Hammer

412 It is not at all seldom that a man must use a wedge of bone. It becomes absolutely necessary when he cuts out the bark pieces from a beech trunk for his canoe. This simple and yet valuable piece has been described on page 111 (Fig. 26) (208). The bone

208. Other illustrations are found in Hyades (q):Plate XXXII, 9, and in Spencer: 139.

1: Gamble--180 E-8 (1910-1954) 1937 0096 Tehgan 0098

/496 cont./

412 wedge, i.e., performs even more important services in splitting thin and thick stems for the lower portion of a crab fork or a mussel fork. It is also used to split round as well as rotten tree trunks which are desired for firewood and thicker trunks which are afterwards broken off by body weight.

412 237 Only the large bones of the whale are suitable for wedges. I did not learn whether or not the Indians ever tried to use bones of large seals. Such wedges have been used by the Fuegians since ancient times. Spencer:132 writes: "Many wedges of whale-bone were found in middens on Navarin Island. These are roughly made, more or less parallel-sided, cut and ground at one end to a curved cutting-edge. The other end is squared and most of the examples show signs of crushing by heavy blows at this end, caused, no doubt, when the wedges were driven in for splitting wood. The bone used appears to be cetacean rib, a very suitable material for making wedges..." /cited in English/.

412 The bone wedge is hammered with a stone into a small groove which must first be incised with a knife or scraper. This stone can justifiably be referred to as a hammer only insofar as it is hit against the bone wedge. It is not prepared in any way. For heavier work one looks for a larger and rounded stone with flat sides, which can be comfortably grasped with the fingers without having them meet over it. This keeps the middle surface of the stone free, and this hits the wedge. Inevitably, the portion hit shows definite traces. One often finds the hammer-stones lying around on the shell mounds. Just as the Indians pick up the first stone handy wherever they need it, they heedlessly throw it away at the place where they have finished working with it. Small hammer-stones, so-called hand-pieces, are used every day to open shellfish and to crush animal bones (208). It is

208. Lothrop (b):141 also speaks of the "Hammerstones. These stones never were hafted" /cited in English/. He illustrates one and mentions "five inches" as its length.

obvious that for these simple purposes the stone does not need hafting.

/[illegible] cont./

412 324 The wedge we have just described is carved out of the strong tines of the large bones of the whale. The process is one of rubbing back and forth with pressure on a flat stone. As soon as the desired form roughly appears, the blade is carefully sharpened. The last thing is to grind and smooth the surface. For this a /[illegible]/ pumice stone the size of one's fist is suitable. The sea tosses these up in many places along the shore. We have repeatedly emphasized that our Indians must often resort to pumice, Spanish piedra, for this very useful material is the only thing they employ to polish their bone points for harpoons and spears and their many wooden shafts. Lothrop (b):143 mentions: "For polishing, a piece of sea sandpaper or the Ona fox-skin and grit, the Tolgan use pumice kiff" /cited in English/. HD:202 spells it kiéf. The pumice, of course, soon wears down on the hard bone tines, but it can be picked up anywhere on the shores (324). The bulk here

[111]

> 323. Lothrop (b):143 confirms: "It frequently floats down Beagle channel and may be picked up on the beach" /cited in English/. Lovisato (a):197 is wrong in saying that pumice is found only on Hoste Island and Lennox Island.

(Vol. I, 288), as we know, not infrequently use the same pumice.

E. Use of Iron

412 177 The Yamana of the first and oldest period were completely unfamiliar with the utilization of iron in any form. It is not found in their country nor could they obtain it through barter. As soon as they saw it on European ships and realized its usefulness, however, they learned how to obtain this raw material, as well as small plates of steel and copper, either legitimately or by stealing. Their impetuous desire for it sometimes led to dire consequences for themselves.

It is surprising how quickly they made iron serve them, taking it over in the form of nails, small plates for sheathing, and

/497 cont./

[illegible] barrel hoops. They did not make entirely new [illegible] tools and implements with it. The awl made from an iron nail(p. 191) is only a modification of their original awl made of a bird's bone (Fig. 48), and, in the case of the knife, a small template has taken then keen and as a blade in place of the mussel-shell. It seems that after only brief experimentation the Fuegins made the above improvements, insignificant to the eye, with the iron they obtained, and after that they never made any more changes.

As is well known, their efforts to obtain pieces of metal go back to the time of the first visits by European ships, and they did not cease even in later times. Waddell (pp.50 had already written when Colnett-[illegible] 45 repeated several years later in similar words: "Of all the things small pieces of iron were the most welcome to them, for the only instruments they had for cutting are mussel shells." At the beginning of mission activity forward Jacob Rau on August 1, 1866, reported on the few Yamana whowere brought to Isla Keppel: "The Fuegians have now learned to value everything which might be in future profitable to them. Pieces of iron which the shore they pick up, and grind them, and make knives out of them" /cited in English/ (VSA 31, 190; 1866).

Naturally, some of them also became very quickly accustomed to /[illegible]/ finished iron implements which could, on occasion, be obtained from a European. Fitz-Roy in his time left Jemmy Button an iron ax, as well as many other things. On June 11, 1880, Despard made the following amusing comment about a few Indians whom he had visited in Wulaia: "It was surprising to see the dexterity with which they handled their rude axes. One of them, Jemmy said, was given him by Captain Fitz-Roy; so it must have been in use for twenty years. It was a very big one originally, but is worn down almost to nothing" /cited in English/. At the mission station the boys and men were not only given the common iron implements, but were carefully taught how to use them properly. In later decades most of them acquired some tool as their property. Today one sees the iron knife and the shoemaker's awl in the hands of every adult; the men work with hammer and pliers, with plane and iron nails, while at the same time every woman owns a pair of scissors and several large steel needles.

/498 cont./

412 177 The things our Indians make with their iron tools differ from what they made formerly only in execution; in each and every object they retain the basic forms. An exception is the substitution of the flat skiff in place of the bark canoe. We can, therefore, by no means speak of an improvement or perfection of total Fuegian technical skill as a result of their adoption of iron implements.

10. Articles Made of Leather, Hide, Bark

323 None of the three Fuegian Indian tribes is acquainted with pottery. Clayey earths are present and, in small amounts, are heated and made into the above-mentioned red pigment used for decoration. It has not occurred to anyone to make pots out of them. The Indians are very poor in material possessions. Still, 415 they need many small things which they must keep in bags and pouches so as not to lose them in their restless moving about. None of these things are durable by any means, but are easily and quickly replaced by others. Most of the utilitarian objects of this kind have been mentioned in the foregoing parts of this book where in each case their use was discussed. Here they will be more or less completely classified according to the material out of which they are made.

251 The explanation for so many things being made of leather is the environment in which our Fuegians have been placed. Their body covering, which does not deserve the name clothing, consists of pieces of leather and of skins, as we have already mentioned on page 50. In that connection we also described the treatment and preparation of leather (p. 68). To repeat briefly, the hunter himself skins the slain animal -- otter, guanaco, seal. He removes the skin piece by piece, cutting it away from the layer of fat surrounding the body with a mussel shell. Immediately /499/ the woman scrapes the larger bunches of fat, muscle, and tissues from the skin which is still soft and wet, stretching it taut above the ground by means of short wooden pegs or a network of short sticks. As soon as the skin has become hard from drying, she scrapes the hairless layer with the ufker[1]. Sometimes she removes the /Fig. 47 appears here/ layer of fur by

/304 cont./

285 bundle straight, pulling the two ends and stripping the whole thing with her hands almost closed. The individual stalks are still lost, for the Indian woman does all these manipulations very quickly. One marvels at the flexibility of the rush stalks which just a moment before were quite stiff and hard. They remain flexible for several days during which time they must be woven. Before it is worked into the basket, the Indian woman pulls each individual stalk between her teeth lightly, in order to flatten it. She does not, however, bite hard enough to press out the juice. This treatment finally makes the stalk quite pliable. Rush stalks that were pulled up and allowed to lie around for more than a week without being used are worthless. Moreover, those that were unevenly warmed lying in the sun or beside the fire are thrown aside.

[Fig 2] The Indian woman does not need any special implement for basketry. The only thing she constantly picks up is a small pointed stick the length of a finger, or a short bone awl. With this she makes a small hole in the weave, through which she draws the running stalk and pulls it tight. The basketry is carried out according to a unified method which, however, allows three variations for which there are separate designations.

1. Tapwēla: This is the most common and the best known basketwork of Tierra del Fuego (218). The Indian woman begins

218. Cooper:304, agreeing, says: "The common form of basketry found among the three Fuegian tribes is of the half-hitch coiled variety made of rush with or without foundation" /cited in English/.

by placing together four or five rush stalks and rolling the end of this little bundle around her left index finger. She immediately draws off the ring and winds a stalk around it by means of half-hitches. This ring will form the center and the lowest portion of the basket (Fig. 50). As soon as the ring is closed, the weave begins according to the knotting method known as tapwēla. For the small thin bundle or roll of four or five stalks which the Indian woman constantly uses, she purposely selects stalks of different

/581 cont./

252 These are emergency situations, however, which Fitz-Roy (a):184 has characterized as follows: "When there is time, the natives roast their shell-fish, and half-roast any other food that is of a solid nature; but when in haste, they eat fish, as well as meat, in a raw state" /cited in English/. As confirmation, we finally have the testimony of the catechist Lewis: "During the whole twenty years in which I have known them I have never seen or heard of a Fuegian eating even a piece of raw meat or uncooked mussel. The latter shellfish is the staff of life with them, but they always cook them, and never eat raw meat. Their food is grilled on the embers or baked in the ashes of the fire" /cited in English/ (MM: XII, 248;1878) (354). This alone proves the significance of the

354. Compared to the many definite assertions of conscientious observers, the vague words of Lovisato (b):151 and Outes (g):52, for example, lose all their reliability.

fire, which each family constantly maintains, even in the canoe, during their journeys which are usually long (p. 43).

/582/ They are content with merely the action of heat and fire on their food; it is impossible to do more with it because pots and vessels are lacking. There is no actual cooking (355).

[415]

355. If someone should happen to need something warm, he fills a large Voluta snail shell, places it in the ashes, and puts a few small stones which have been heated in the fire into the shell with fire tongs. In this process, of course, the water never evaporates, hence it would not be suitable for cooking meat or vegetables.

• [412]

At the same time it is impossible to use spices and condiments. If they were added, they would disappear in the fire. I can only repeat with Hyades (p):328 that "intoxicating, narcotic, or stimulating substances are not known" /translated from French/.

/605 cont./

172

but one belong to the type of arrowpoint with wings /Spanish, aletas/, with two distinct sizes. The winged /Spanish, aletiforme/ type is known in Tierra del Fuego and Patagonia" /translated from Spanish/.

with a very broad projection, which Vignati (c):124 calls "pedunculado" and which resembles many specimens from Patagonia (Fig. 74).

Apparently the Yamana in the distant past used stone scrapers little or not at all. They preferred a simple mussel shell without a haft because this was very easy to /606/ obtain and to sharpen at any time. We seldom find a stone scraper in the shell mounds. I never saw one, and Fred Lawrence could not remember having seen them either. The three specimens Lothrop (b):190 found in Bahía Harbertón seemed unknown to his informants, although Guillermo Bridges contradicted this (Fig. 75). It is possible that they originated among the Selk'nam or as a result of their influence on the Yamana. Until further finds are brought to light, any discussion about it is fruitless. /Fig. 74 appears here./ I cannot but suspect, however, that the persons who picked up stone arrowpoints on the shell mounds either did not recognize actual scrapers as tools or did not appraise them.

Another strange object is a stone borer ("perforador") 4.8 centimeters long from the shell mound at Ushuaia. On a trapezoid-shaped lower part rises the evenly fashioned needle (Fig. 74). This type is not rare in Patagonia; I also found it on the shore of Useless Bay (Vol. I, 261). Compare Vignati (c):124.

[412]

Finally we must mention the numerous stone hammers which show no shaping but unmistakably indicate that they were used. These are oval rubble-stones which the sea itself has shaped and which the present-day Yamana still use very often, either to break open hollow cylindrical bones, to beat leather, or to make larger implements (406). It is strange that Vignati (c) does not

406. Lothrop (b):192 calls these pieces "Hammerstones, anvils, grease stones" and adds, "Every family carried an oval

2: Cooper E-4 (no date) 1946 SH6 Yahgan SH6

of several skins sewn together, was sometimes set up—a practice whose origin, native or European, is uncertain. (For details on manufacture and use of canoe, cf.: Lothrop, 1928, pp. 143–145; 1932 a, pp. 251–253; Gusinde, 1937, pp. 438–457.)

After about 1880 the *Yahgan* began to give up their traditional bark canoes, and to adopt the dugout. Still later, prior to Lothrop's visit in 1924–25, the dugout had been entirely superseded by the dory, of European type and origin.

The *Yahgan* never adopted the plank boat from their *Alacaluf* neighbors and never used rafts or skin-covered watercraft, so far as our records reveal.

MANUFACTURES

Pottery, weaving, and metallurgy were entirely absent; no traces of pottery have been discovered archeologically in *Yahgan* territory.

String-making and sewing.—Plant fibers, plain, shredded, or braided, were used in basket making, canoe sewing, and for mooring lines, respectively; braided whale sinew, for necklaces, fishing lines, and tool and weapon lashings; braided guanaco sinew, for bowstrings; whalebone, in sewing canoes and for bird snares and fishline nooses; seal-hide thongs, for tool and weapon lashings, harpoon lines, basket handles, mooring lines, and bowstrings. Awls were made of bone and wood, unhafted. The drill was lacking.

Basketry.—Four techniques in basket making were in use: (1) Simple half-hitch coiled, the commonest type (fig. 13, *top*); (2) twisted half-hitch coiled, rarer (fig. 13, *center*); (3) knotted half-hitch coiled, not common (fig. 13, *bottom*); (4) a sort of wrapped type. The first three were of excellent craftsmanship; the last, very crudely woven, and used only as a dip net for catching very small fish. The material for all four was a rush (*Juncus magellanicus*). The coiled baskets were more or less oblong-spheroid in shape, and had a carrying handle of thong or plaited rush (pl. 33, *c*).

Skin dressing.—No process of dressing proper is reported. Seal-skins were stretched on the ground, covered with grass and moss, and left so for a while, to help dehair them. Drying frames were apparently used. The scraper consisted of a mussel shell lashed to a cylindrical stone haft. The *Yahgan* made thongs flexible by drawing them through their teeth or by chewing them.

Stoneworking.—Little use of worked stone was made except for arrowheads and, rarely, scrapers. The workmanship was crude. Archeologically, there are some traces of stone pecking and polishing (Lothrop, 1928, p. 203; cf. Bird, 1938).

Containers.—Cylindrical buckets (pl. 33, *e*), of *Nothofagus betuloides* bark, for carrying and holding drinking water and for bailing, were made by the woman, with the use of a barking tool dif-

2: Cooper E-4 (no date) 1946 SH6 Yahgan SH6

415 ferent from the man's. Among other more used containers were: pouches of seal or penguin skin for holding small objects; bladders or windpipes of seals or porpoises for holding ocher and firestones; crops of geese and stomachs of seals for holding oil. (Cf. others in Lothrop, 1928, p. 133.)

412 **Tools.**—These have mostly been dealt with incidentally in the preceding sections. The hafted mussel-shell scraper, mentioned above under "Skin dressing," was also the common knife. Stone-headed daggers or knives were used by the earlier *Yahgan* (Cooper, 1917, p. 207). The stone celt or ax was lacking. Wedges were of bone; arrow polishers, of a bit of pumice.

411 **Weapons.**—The characteristic weapons used by the *Yahgan* both in hunting and in fighting were the spear and harpoon (fig. 11, *a–c*), the club, and the sling. The bow and arrow, in contrast to *Ona* usage, occupied a very subordinate position.

The spear shaft was quadrangular, hexagonal, octagonal, or decagonal in section, from 8 feet (2.5 m.) or less to 12 feet (4 m.) long; the shank, ordinarily of bone, with unilateral or bilateral single or serrate barbs and with notched tang, lashed to the split or slotted end of the shaft. The atlatl was absent. The harpoon, without toggle, was merely a spear with a detachable shank tied by a thong to the shaft. The club was a plain straight heavy stick. The cradle of the sling was of hide, the lines of braided whale gut.

Yahgan bows, arrows, and quivers closely resembled those of the *Ona*—a curved self bow, ranging from about 3 to 4 feet long, with string of seal hide or of braided seal, whale, or guanaco sinew; the arrow, without foreshaft, and with triangular stemmed and barbed head of stone, bone, or, more recently, glass; the quiver, rectangular, of skin, or tubular, of bark. Arrow poisoning was absent. Both archeological and ethnological evidence suggests that the *Yahgan* [179] most likely acquired the bow and arrow after their arrival in their historic habitat, from the *Ona*. (Cf. Bird, 1938, pp. 261–263; Cooper, 1917, pp. 211–213.)

372 **Fire making and illumination.**—The only method of fire making was by percussion with flint and pyrites, bird down or dried fungus serving as tinder. Fire was carried around in the canoe on a hearth of earth, shell, or stones. Two-pronged tongs were in use. Bark torches provided illumination. Fire was employed not only for cooking, heating, and lighting, but also for signaling, straightening arrow and spear shafts, bending canoe ribs, felling trees, preparing bark for canoes and material for baskets, and other purposes.

SOCIAL AND POLITICAL LIFE

864 **Marriage and the family.**—The sexes were kept separate after about the age of 7 and were warned by their elders against sexual liberties.

3: Lothrop E-5 (1924-1925) 1928
SH6 Yahgan SH6

afforded a basis for little more than the mere act of existence and mutely testify to the cultural poverty of their makers.

1. FIRE-MAKING APPARATUS.—By all accounts the Yahgan rarely made fire, because they carried it with them on the hearths in their canoes. In their semi-nude society to lack fire might mean death, and so wherever they went they tried to husband a wisp of flame. When it was necessary to kindle a new blaze they used flint and pyrites (*s'wálli*) with dried fungus or down for tinder, after the fashion of the Ona. Various places in Fuegian waters where pyrites can be secured are mentioned on page 65; one of these, Merton island, lies in Yahgan territory. However, Rev. Thomas Bridges states that they got this material by trade with the Alacaluf, who obtained it on Clarence island. Especially fine flints were found in a valley called Aníawaía between Lapataía and Ushuaia. To protect the fire-making apparatus from the weather it was kept in a small hide pouch called *asánu* (fig. 53, *b*).

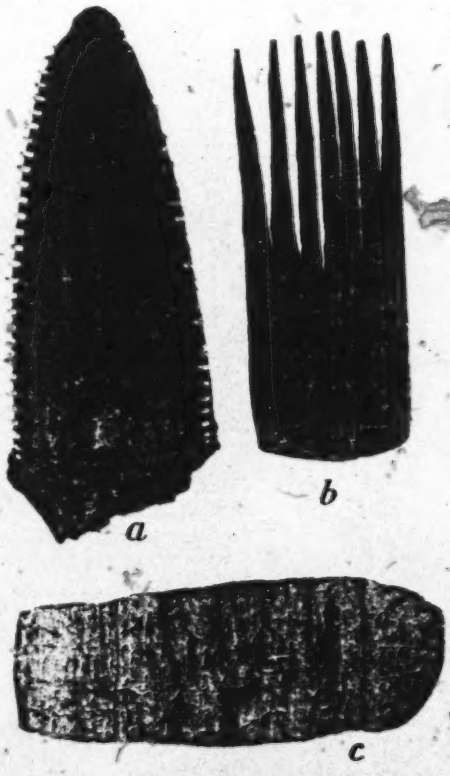

FIG. 54.—*a*, Porpoise-jaw comb; length, 6 in. (14/2370). *b*, Whalebone comb; length, 5¼ in. (14/2374). *c*, Seal-throat pouch; length, 8½ in. (14/2369)

2. FIRE-TONGS.—For tending the fire and for removing the objects from it the Yahgan used tongs. These are no more than a stick an inch or so in diameter and a couple of feet long, split for three-quarters of its length. Cultural borrowing is indicated by the name of this implement—*láka* in Yahgan,

3: Lothrop E-5 (1924-1925) 1928
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lákel in Ona,—but there is no means of determining which tribe was the inventor.

3. HAMMER AND GREASE STONE.—On old camp-sites numerous smooth, water-worn stones can be picked up. They were used as hammers to break open various shellfish, and also they served as anvils for cracking hot marrow-bones to allow the grease to solidify on the cool surface, whence it could be scraped up and eaten.

4. BROOM.—The Yahgan housewife today occasionally sweeps out her domicile, employing for that purpose the wing of some large bird such as a goose. This custom probably is not aboriginal, but is rather the result of missionary contact.

5. COMB.—The Yahgan sometimes comb their hair, and for this they make rude combs (*ushtánim*) of whalebone or employ the jaw of a porpoise. Combs of both types are illustrated in fig. 54, *a*, *b*.

6. SPATULA.—Another article for beautifying the person, found in the well-ordered Yahgan house, is a small spatula (*telákikamána*) used for painting the face and body. One of these appears in fig. 69, *d*.

FIG. 55.—Yahgan bark bucket. Height, 12¼ in. (14/2267)

7. BUCKET.—Under the Ona manner of existence a bark bucket (fig. 55) would have been of little service, for it would soon be broken under the exigencies of their system of transport; but the Yahgan found the bucket (*atakála*) an extremely valuable object, and used it to bail their canoes and to store water in their camps. Like the canoe itself the bucket was made from the bark of the evergreen beech, but while the canoe was man's work, the bucket was woman's work. Hence the bark for the bucket was removed from the tree with the woman's barking tool (*téshupu*), which is a chisel-like device made from the leg-bone of the guanaco (fig. 68). The inner fat lining of the bark was then scraped off, and a rec-

3: Lothrop E-5 (1924-1925) 1928
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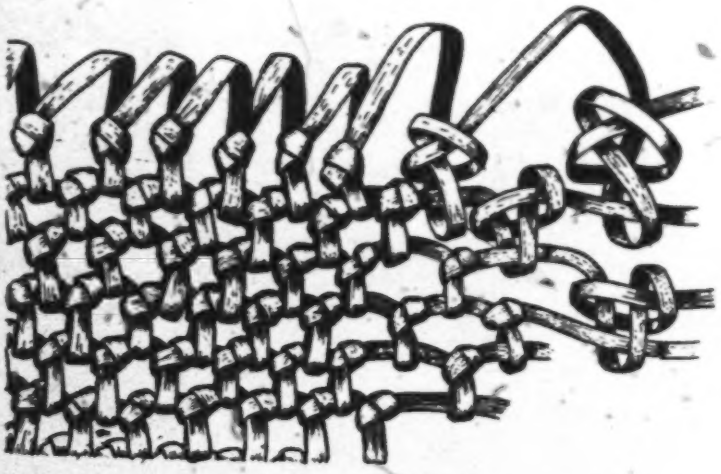

FIG. 65.—Detail of *gaíchim* basket. Height, 2 in. (14/2312)

TOOLS

Yahgan tools are just as primitive as the Ona tools, although adapted to different uses. The Yahgan have a constant tendency when making something to pick up the first object that comes to hand—a bit of shell, a fire-flaked stone—and employ it, rather than to take the trouble to get steel tools which would better serve their purpose.

1. SCRAPER.—The old-time Yahgan scraper (*tu'wĕ'na*) was a mussel-shell blade (*káluf*) set on a stone handle (*áwi*). The shell blade was not the ordinary mussel-shell, but a giant variety (*chiamúnka*), four or five inches in length, which now grows on the beaches of the outer islands toward the Antarctic. Formerly, however, it must have flourished on Beagle channel, as many examples were found in the interior of a shellheap at Harberton. To set this shell blade on the stone handle, the edges of the base of the shell were carefully broken away in order to reduce the curve and make the blade lie flat against the stone. However, the blade could not be attached directly to the stone, or it would have broken too easily, hence it was bedded on a small bunch of shredded barberry wood (*chĕlerr* [1]) or a wad of moss (*hánakóhl*). These two

[1] This word was obtained from a Lennox islander. I am not certain whether it means "shredded barberry" or whether it is a dialectic variant of the central

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variant forms are seen in pl. x, *a*, *b*. For lashings on scrapers the Yahgan used either a seal-hide thong (*tamenáru*, pl. x, *a–c*) or else a braided whale-sinew line (*tápim*, pl. x, *d*) such as was employed for fishing.

Since the European settlement the natives have substituted a steel blade (*hárfkar*) for the shell whenever possible, and the resultant tool is called *wána*. It is illustrated in fig. 66, *a*. They

FIG. 66.—Yahgan scraper and whetstone. Length, 11 and 9¼ in. (14/2367, 2385)

now also set the steel blade in a split wooden handle in the same fashion as the Ona, as can be seen in pl. x, *c*.

The scraper was the most important tool to the Yahgan and served a great variety of purposes. Owing to the weight of the stone handle it could be used not only for scraping but also as a serviceable hand-ax. When the shell blade became chipped or dull it was sharpened on a stone (*chípi*) with a long flat surface (fig. 66, *b*). In type this scraper corresponds to the Ona wood scraper (fig. 25, *a*).

In the old days before steel was available, the Yahgan are said to have used a tool like the transverse Ona flesh-scraper (fig. 25, *b*). This was denied by Yahgans whom I questioned, but was affirmed by Mr. William Bridges, whose statement was supported by the discovery of ancient stone blades apparently designed for transverse hafting (fig. 104, *b*, *c*). The abandonment of the transverse scraper may be due partly to the use of steel, but also may be accounted

Yahgan *chélis*, which means "barberry" in general (*Berberis ilicifolia*). Shredded barberry was also employed as a towel after bathing.

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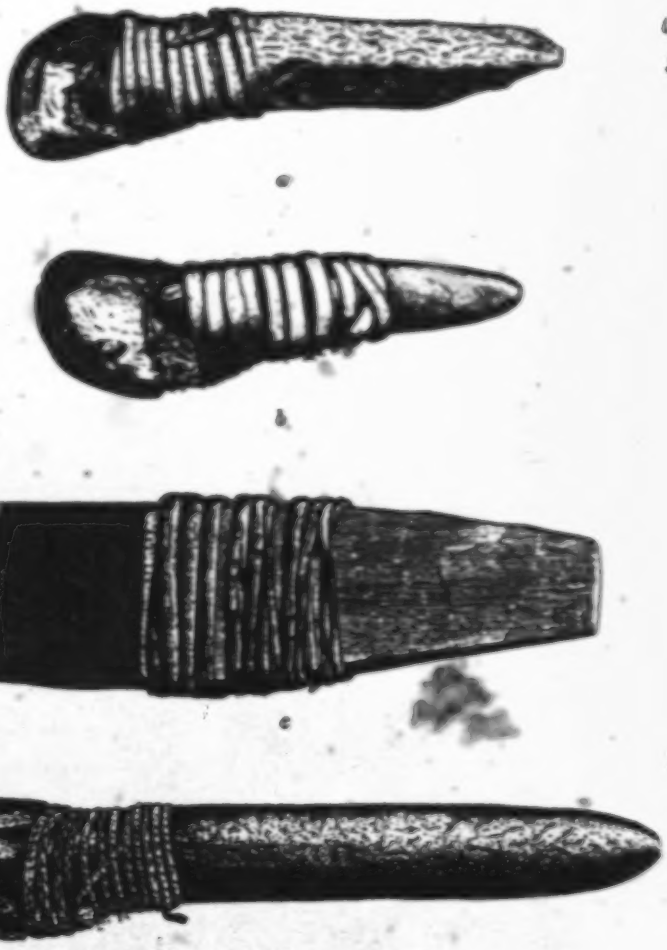

YAHGAN SCRAPERS

a, b, d, PRIMITIVE TYPE; LENGTH, 14, 10½, 9 IN. (14/2301, 2300, 2302). c, MODERN TYPE; LENGTH, 6 IN. (14/2303)

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for on the ground that since the Yahgan have ceased to use skin houses and skin clothing they have much less need of such an implement.

2. KNIFE.—Ancient knife-blades from Beagle channel are described on page 190. In recent years the Yahgan, like the Ona, have made knives from any available scrap iron or steel.

FIG. 67.—Yahgan man's bark-working tool. Length, 31 in. (14/2332)

3. BARKING TOOLS.—The Yahgan employ two kinds of tools for removing bark from trees. One of these (*sánakat*), used exclusively by the men (fig. 67), is made from a large piece of the jaw-bone of a whale and has a blade usually at each end. The woman's tool (*tékupu*) is part of a guanaco leg-bone and consequently is much smaller (fig. 68); it has a single chisel-like blade, while the other end, the articular extremity of the bone, forms a convenient handle.

FIG. 68.—Yahgan woman's bark-working tool. Length, 9 in. (14/2331)

4. AWL.—The old-time awl (*ámi*) was a sharpened bit of wood or of bone (fig. 69, *c*, *e*), but in recent years the Yahgan have used a nail set in a wooden handle (fig. 69, *a*, *b*). Awls were employed for piercing skins to make clothes, housetops, and bags; to pierce bark in the manufacture of canoes, bailers, and buckets; and also for the weaving of baskets.

Like the Ona, the Yahgan had no drill, and so their material culture was limited by the fact that they were unable to make holes in such a relatively soft substance as wood.

5. HAMMERSTONES.—Usually present on Yahgan camp-sites are a number of stones which show marks of abrasion (fig. 70). The

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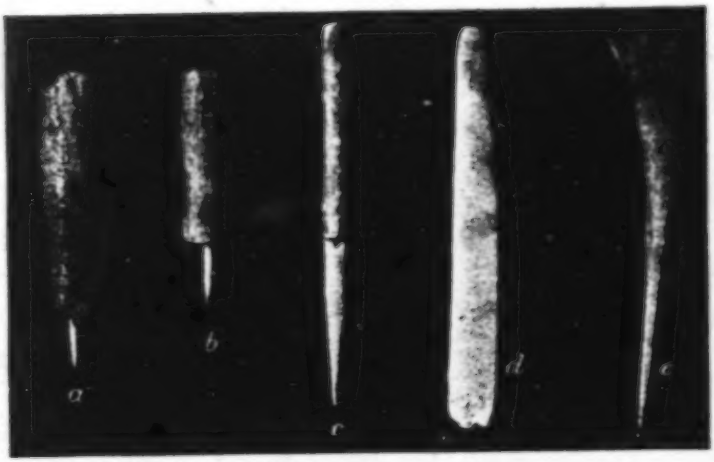

FIG. 69.—Yahgan awls and spatula. Length, 3¼ to 5¼ in. (14/2376, 2376, 2378, 2333, 2334)

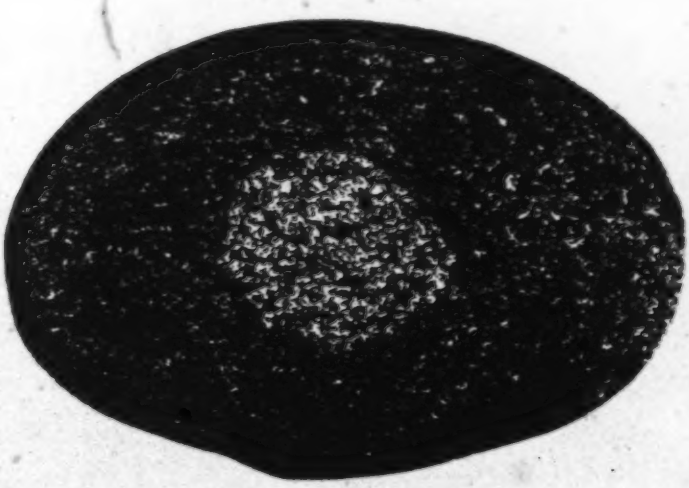

FIG. 70.—Yahgan hammerstone. Length, 5 in. (14/3984)

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principal purpose for which such stones were used was opening shellfish. These stones never were hafted.

6. SHARPENING STONES.—For sharpening knife and scraper blades the Yahgan employed a smooth stone (*chípi*) such as is shown in fig. 66, *b*. They can frequently be picked up on old camp-sites. The rounded hammerstones may also have been employed for sharpening.

7. PUMICE.—For polishing, in place of our sandpaper or the Ona fox-skin and grit, the Yahgan used pumice (*hiól*). This material (fig. 71) is found on Picton island and on the coast of Tierra del Fuego to the north. It frequently floats down Beagle channel and may be picked up on the beach.

FIG. 71.—Yahgan pumice polisher. Length, 2¼ in. (14/2224)

BOATS AND BOATING

BARK CANOE

In the old days the Yahgan used a curved bark canoe which in outline is well described by Goicueta's phrase, "like a moon of four days, with raised tips." The last one ever afloat is shown in fig. 72.

FIG. 72.—The last Yahgan bark canoe ever used. (Courtesy of Rev. John Williams.)

The bark employed (*afirshun*) was taken from the evergreen beech (*Nothofagus betuloides*), known to the Yahgan as *súschi*. It had to be stripped from the tree in the spring (October or November) when the sap was rising. For this purpose a tool made from the jaw-bone of a whale (*sánakai*) was employed (fig. 67), and the

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172 fig. 102, pictured in fig. 103, is an exceptionally deep midden; it towers over the head, although situated on flat land. On the seaward side this heap has been undercut by the waves, which have exposed a large and solid layer of breccia near the bottom of the refuse.

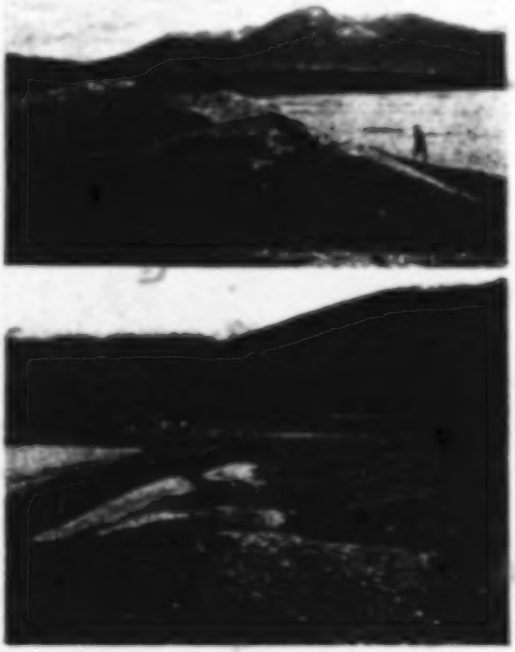

FIG. 103.—Akawalakirrh shellheap, Róbalo bay.

ARCHEOLOGICAL FINDS

We have discussed at some length the nature of the Yahgan camp-sites and now must take up the very primitive remains to be found in their débris.

172 412 First, however, we should remark that the Yahgan, even today when metal tools are readily available, show a marked tendency to use anything which comes to hand, be it a shell fragment or a flint chip. Consequently, in the old days they must have accomplished much of their handiwork with such eolithic implements, and probably used their more formal tools principally for the arduous or very delicate tasks. This tendency is brought out by the small number of really well-wrought implements which have come from the middens in comparison with the comparatively great number of crude or half-finished ones.

The specimens illustrated were picked up on the seaward slope of various middens where the undercutting of the waves had

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disturbed the surface. In consequence there is no evidence from what level they had come originally.

1. KNIVES.—Chipped blades apparently intended for use as knives normally are leaf-shape, from two to five inches long, and, unlike the Ona knives, are worked on both sides. In pl. XIX, *a*, *b*, are shown two examples of large knives, each with a small nock near one end to assist in the hafting. Smaller blades appear in *c*, *d*, and *e* of the same plate; these may well have served as knives or conceivably might have been barbless tips for spear or arrow.

2. SCRAPERS.—Although two kinds of scrapers come from the shellheaps, neither is very common, probably because the Yahgan did most of their scraping with shell. In fig. 104, *a*, we show a

FIG. 104.—Scrapers from Wlpinstumánakalum, Harberton, Tierra del Fuego. Length of *a*, 2¾ in. (14/3977)

disc scraper with a cutting edge completely encircling it. Fig. 104, *b* and *c*, both seem to be scraper-blades fashioned for hafting in the manner of the modern Ona flesher. One of them (*c*) has a recessed curve at one end of the blade; this may have been intended for cleaning bones, or possibly it served merely to give additional grip for the lashings.

The Yahgan with whom the writer came in contact denied that they had ever used this type of scraper. Mr. William Bridges however, stated that he had seen them employed, an assertion borne out by the discovery of these archeological specimens.

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a

b

c

d

e

STONE BLADES, MÁQUINCHAOKOLOK, HARBERTON, TIERRA DEL FUEGO

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172 412 3. SPEARPOINTS.—Four spear- or arrow-points are illustrated in fig. 105. Of these, *a* is a triangular blade with barbs but no tang,

FIG. 105.—Stone blades. *a*, Near Gable island (5/8544); *b*, *c*, Wâpisatumânakulum, Harberton (14/3977); *d*, Róbalo bay, Navarin island (14/4002). Length of *b*, 3 in.

while *b* has a tang but no barbs. However, *c* and *d* had both tang and barbs, and this seems to be the dominant Beagle Channel

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type, because several other specimens have been published by Bove (1883) and Hyades (1891). The general shape of these points is similar to that of modern Ona arrowpoints and ancient stone points from eastern Tierra del Fuego. Yahgan workmanship, on the whole, is cruder than Ona, and to the writer's knowledge no points have been found on the south coast equal to the delicate blade illustrated in fig. 40.

4. Hammerstones, Anvils, Grease Stones.—Every Yahgan family carried an oval water-worn stone which was used for a variety of purposes, such as hammering. These stones (fig. 70) may be picked up at every ancient camp-site.

5. Bone Tools.—Bone tools of modern type sometimes are found in shellheaps under conditions implying considerable antiquity.

Age of Archeological Remains

The age of the archeological remains on Beagle channel is a problem that has intrigued the writer from the moment of his arrival there, and every effort was made to collect data for its solution. It should be frankly stated at the outset of this discussion that there is no exact answer, but it is nevertheless possible to deduce an approximate figure. There are several methods by which the problem may be attacked; thus we shall discuss (1) the variations in Yahgan speech, (2) known historical movements in other parts of South America, (3) the internal evidence of age in Fuegian shellheaps, and finally (4) their probable rate of accumulation.

1. Antiquity of the Yahgan Dialects

As explained above, the Yahgan spoke five distinct though mutually intelligible dialects. This is rather surprising because (*a*) they were a roving people occupying only a small territory, (*b*) they were exogamous, and (*c*) the total population was only about 3000 individuals. Assuming, as seems probable, that the Yahgan reached Tierra del Fuego more or less as a unit speaking a single tongue, how long did it take them to modify their language in five distinct ways?

In the more civilized parts of the world linguistic change also has taken place, and, because language is not only spoken but written, the archaic forms are preserved and can be studied. For instance, the breaking up of Latin into the modern Romance